

WHAT IS CLAIMED IS:

1. A distributed directory management system for offering a retrieval service with respect to service objects stored in object repositories located in service spaces, respectively, said system comprising a service space centralized managing mechanism, service object managing mechanisms provided corresponding to said service spaces, respectively, service space connection managing mechanisms provided corresponding to said service spaces, respectively, and service object retrieval managing mechanisms provided corresponding to said service spaces, respectively,

wherein said service space centralized managing mechanism collects mutual connection information of said service spaces from said service space connection managing mechanisms and manages the collected mutual connection information,

wherein each of said service object managing mechanisms manages corresponding one of said object repositories and executes retrieval of a service object in said corresponding one of said object repositories,

wherein each of said service space connection managing mechanisms implements message communication with said service object managing mechanisms to collect mutual connection information of corresponding one of said service spaces and another of said service spaces, and manages the collected mutual connection information, and

wherein each of said service object retrieval managing mechanisms sends a retrieval message from a user to corresponding one of said service object managing mechanisms to request retrieval of a service object in said corresponding one of said object repositories, receives a result of the retrieval from said corresponding one of said service object managing mechanisms,

analyzes the result of the retrieval and produces a message to be sent to the user based on the analyzed result of the retrieval.

2. The distributed directory management system according to claim 1, wherein each of said service object managing mechanisms sends a message indicative of existence thereof, every time a state thereof is changed, to corresponding one of said service space connection managing mechanisms, and wherein each of said service space connection managing mechanisms receives said message from corresponding one of said service object managing mechanisms to update mutual connection information between corresponding one of said service spaces and another of said service spaces.

3. The distributed directory management system according to claim 1, wherein each of said service object managing mechanisms periodically sends a message indicative of existence thereof to corresponding one of said service space connection managing mechanisms, and wherein each of said service space connection managing mechanisms receives said message from corresponding one of said service object managing mechanisms to update mutual connection information between corresponding one of said service spaces and another of said service spaces.

4. The distributed directory management system according to claim 3, wherein each of said service object managing mechanisms uses a multi cast announcing function to send the message indicative of the existence thereof.

5. The distributed directory management system according to claim 1, wherein upon receiving the retrieval message from the user, corresponding one

of said service object retrieval managing mechanisms uses the mutual connection information managed by corresponding one of said service space connection managing mechanisms so as to send said retrieval message to corresponding one of said service spaces and another of said service spaces for requesting the retrieval.

6. The distributed directory management system according to claim 1, further comprising directory managing authentication mechanisms provided corresponding to said service spaces, respectively, wherein each of said directory managing authentication mechanisms has a function of issuing a ticket for using the retrieval service to a user and, when said ticket is submitted by the user, verifies legitimacy of the ticket so as to allow said user to access to corresponding one of said object repositories.

7. The distributed directory management system according to claim 1, further comprising directory managing authentication mechanisms provided corresponding to said service spaces, respectively, wherein each of said directory managing authentication mechanisms has a function of verifying legitimacy of a digitally signed retrieval message of a user so as to allow said user to access to corresponding one of said object repositories.